

JUNE 1997

HEALTHCARE

COMPUTERWORLD JOURNAL

THE ENTERPRISE STRIKES BACK

Healthcare delivery systems are implementing various strategies to ensure department systems meet the strategic needs of the enterprise





"WITH MORE INFORMATION,

OUR PHYSICIANS CAN MAKE

BETTER DECISIONS.

BOTTOMLINE...

OUR COSTS GO DOWN.

AND MY CONFIDENCE?

IT GOES WAY UP."

©1997 SUNQUEST INFORMATION SYSTEMS, INC. ALL RIGHTS RESERVED.

INTELLICARE. QUICKER AND

EASIER ACCESS TO MORE

COMPLETE INFORMATION

IMPROVES CARE AND REDUCES

RISK, WHICH SAVES LIVES.

AND CONTROLS COSTS. ALL

THIS IS FOUND IN OUR LEADING-

EDGE REPOSITORY WHICH

SMOOTHLY INTEGRATES AND

MANAGES DATA FROM DISPARATE

INFORMATION SYSTEMS. BACKED

UP BY A FULLY SUPPORTIVE

PARTNER THAT OFFERS A BROAD

PRODUCT LINE. A 17 YEAR TRACK

RECORD IN CLINICAL SYSTEMS.

AND SOARING CONFIDENCE.

WWW.SUNQUEST.COM

1-800-748-0691

FOR CONFIDENCE.

INSIDE AND OUT.

SUNQUEST
INFORMATION SYSTEMS

CLINICAL
PATIENT
REPOSITORY

LABORATORY
INFORMATION
SYSTEMS

MANAGED
CARE
SYSTEMS

COMMERCIAL
LABORATORY
SYSTEMS

LABORATORY
FINANCIAL
SYSTEMS

RADIOLOGY
INFORMATION
SYSTEMS

contents

june 1997



COVER STORY

Islands No More: Department Systems Meet the Enterprise

H8 Departments learn the ways of the enterprise as providers tighten controls over ancillary systems to better integrate delivery networks.
By Sharon Watson

departments

VITAL SIGNS

H5 N.C. CHIN SETS PACE FOR STATEWIDE NETS
States look to emulate North Carolina's success
By Thomas Hoffman

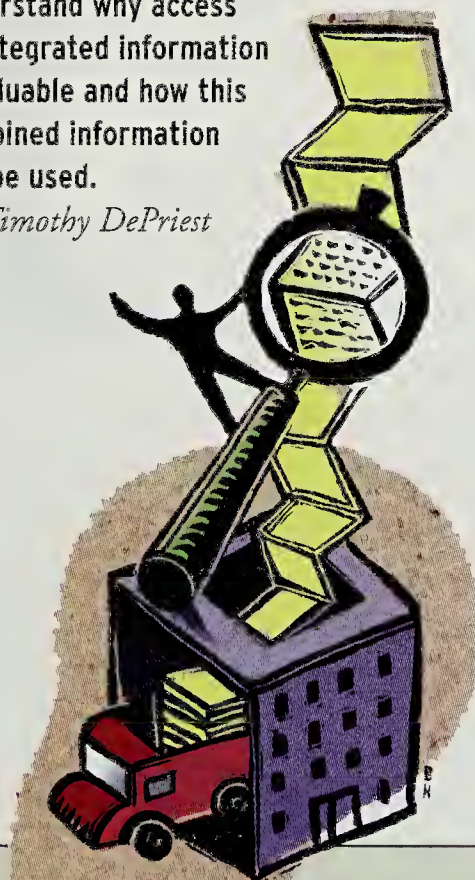


H6 WIRELESS WORKS WONDERS FOR PATIENTS AND STAFF
Hospital finds that mobile staffers provide quicker, more efficient care
By Jennifer Schmidt

H7 NOTES FROM NMHCC
Selected notes, musings and factoids picked up at the National Managed Healthcare Congress in Washington.

PERSPECTIVE

H14 ARE YOU PREPPED FOR A DATA WAREHOUSE?
Healthcare's challenge is not to determine whether a data warehouse is an appropriate solution but to understand why access to integrated information is valuable and how this combined information will be used.
By Timothy DePriest



COMPUTERWORLD HEALTHCARE JOURNAL

COMPUTERWORLD MAGAZINES EDITOR

Alan Alper
alan_alper@cw.com

MANAGING EDITOR

Catherine McCrorey
cathy_mccrorey@cw.com

ART DIRECTOR

Stephanie Faucher

ASSISTANT MANAGING EDITOR

Kimberlee A. Smith

CONTRIBUTING WRITERS

Thomas Hoffman
Jennifer Schmidt
Sharon Watson

CONTRIBUTING COLUMNISTS

Timothy DePriest

EDITORIAL ADVISORY BOARD

Julian Bailes
*Executive Vice President,
Orlando Regional
Medical Center*
Wei Tih Cheng,
*Vice president of IS,
Memorial Sloan
Kettering Cancer Center;
Chairman, CHIME Foundation*

Thomas Fischer
*Senior vice president, CIO,
Blue Shield of Calif.*

Dave Garets
Gartner Group, Inc.

John Glaser
*Vice president, CIO,
Partners HealthCare
System, Inc.*

TO CONTACT US

Computerworld
P.O. Box 9171
500 Old Connecticut Path
Framingham, Mass. 01710

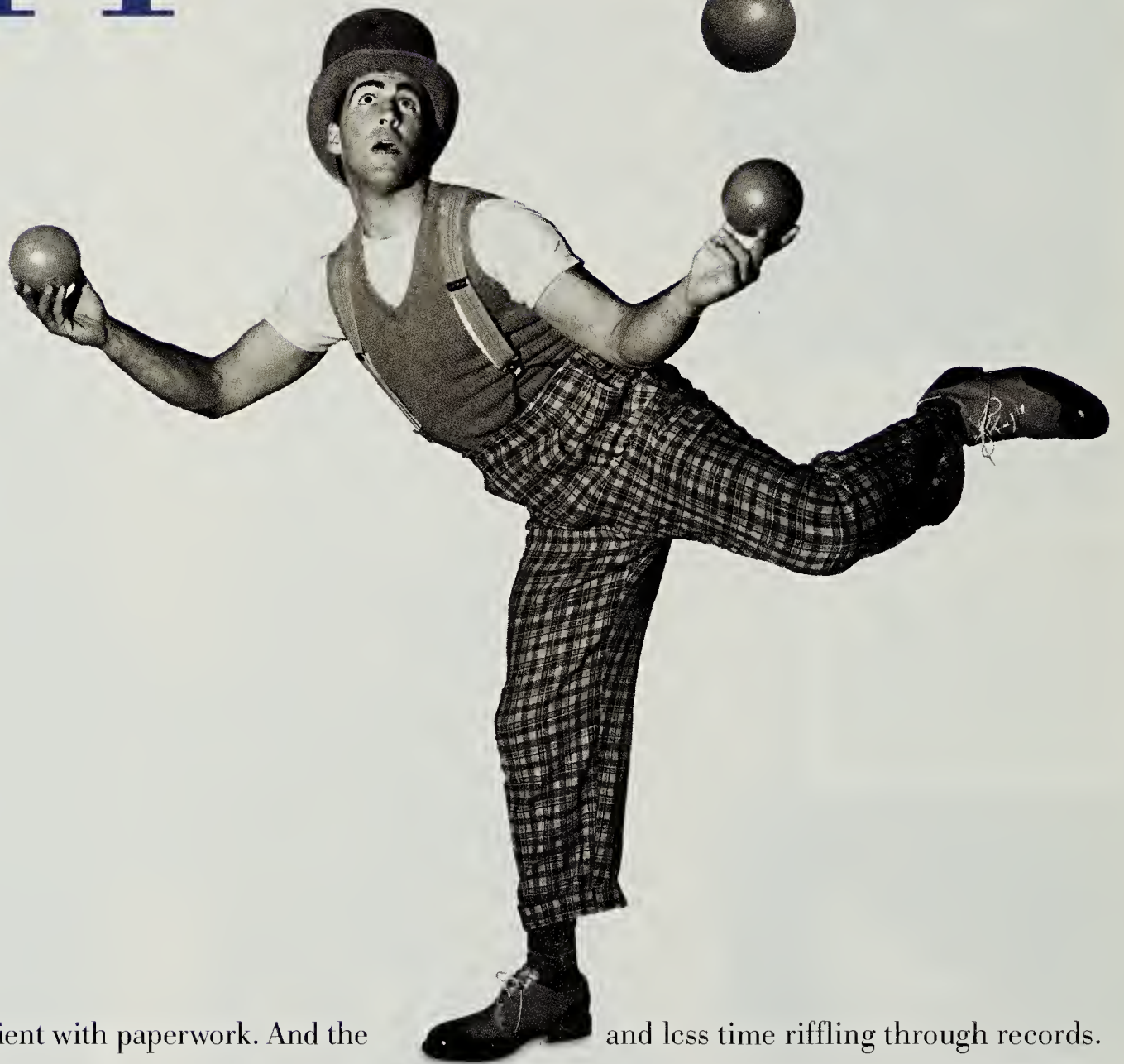
SUBSCRIPTIONS

(800) 669-1002

“Insurance forms, utilization reviews,
capitation, outcomes management.

Oh yeah, and

Hippocrates.”



You can't cure a patient with paperwork. And the continuing pressure to revamp health care is not making anyone feel better, either. Do more with less. Don't sacrifice care. How do you juggle all the issues?

One solution is IBM's Health Data Network. A patient's medical and other important nonmedical records are stored in one secure place: online. An authorized health care provider can look up medical histories within seconds, no matter where in the network their patients were treated. So doctors spend more time being doctors,

and less time riffling through records.

Paring down paperwork also cuts costs. Repetitive testing vanishes. Insurance companies can preauthorize treatments online. And everyone has more time to focus on wellness.

Interested in your own health care remedy? Give us a call at 1 800 IBM-4YOU, ext. 4HEALTH1, or visit our health care home page at www.solutions.ibm.com/healthcare.

Solutions for a small planet™

IBM®

vitalsigns

A REVIEW OF HEALTHCARE TECHNOLOGY AND BUSINESS HAPPENINGS

N.C. CHIN Sets Pace for Statewide Nets

States look to emulate North Carolina's success

BY THOMAS HOFFMAN

Eighteen months ago, the state of Alabama and its 20 largest employers embarked on an ambitious plan to create a statewide health information network in which providers, payers and vendors could exchange medical patient information electronically.

But like many well-intentioned marriages between the public and private sectors, Alabama's effort quickly got bogged down in politics and posturing. Searching for help, the Yellowhammer state looked eastward to North Carolina, which is crafting what is arguably the best-planned, border-to-border healthcare information network in the continental 48.

"Certainly there are a lot of unspoken motives" among the 60 organizations participating in the North Carolina Healthcare Information & Communication Alliance (NCHICA), "but they are much further along in reaching full medical data exchange than any one [state]," said Jim Laney, a Webmaster and delegate from the Alabama De-

partment of Public Health in Montgomery who has attended NCHICA's last two annual conferences.

He may be right. Born out of a gubernatorial mandate in 1994 to improve the quality and accessibility of healthcare to North Carolina's citizens, NCHICA (pronounced en-CHEE-ca) has set the standard for privacy, electronic data interchange (EDI) and other telemedical issues.

An open door policy for people such as Alabama's Laney has kept NCHICA from becoming a political battleground. "If you leave the groups open and leave the decision-making up to the leaders, they're going to do fine," said Holt Anderson, executive director for NCHICA in Research Triangle Park, N.C.

One of the main reasons NCHICA has been successful is that it has "come up with concrete goals that are achievable," said Gary Gartner, a post-doctoral fellow in medical informatics at the University of North Carolina Medical School at Chapel Hill. Gartner is a member of NCHICA's voluntary patient information locator focus group, one of five NCHICA focus groups that have estab-

lished a set of tasks to complete over a 12- to 18-month landscape.

For example, NCHICA spent 18 months preparing model legislation for North Carolina Bill 925 (Privacy of Health Information), which, at deadline for this story, was expected to be signed into law after sailing through the



"NCHICA IS evaluating standards for secure electronic communications that address the whole spectrum of users."

**HOLT ANDERSON
EXECUTIVE DIRECTOR, NCHICA**

House Technology Committee unscathed in mid-April. The legislation was designed to protect the confidentiality, privacy and security of health information — a sticky wicket that continues to get messier.

Under managed healthcare, primary caregivers have to exchange patient information with researchers, long-term care providers and other orga-

nizations. Because the economic models vary for each of these organizations, different levels of electronic security "would be unaffordable for some of those groups," Anderson said. As such, NCHICA is evaluating standards for secure electronic communications "that address the whole spectrum of users," he said.

Technologies being evaluated for standard security include Secure Socket Layer 3 (SSL3) for two-way authentication using browser "certificates" and packet filters that use an "encrypted sleeve" in a router-to-router connection where the session keys change at random intervals to make them less vulnerable to at-

tacks. Most of the security standards such as SSL3 are fairly new, so NCHICA still needs time to evaluate them before committing to them, Gartner said.

Confidentiality of patient records has become even more critical with the passage of what is widely referred to as "Kennedy-Kassebaum," a health insurance reform bill written by Sens. Edward M. Kennedy (D-Mass.) and Nancy Kassebaum (R-Kans.) that guarantees insurance coverage for workers who are between jobs and those with preexisting medical conditions. The bill, signed into law by President Clinton last August, effectively changes

Please turn to next page

Continued from page H5
the way healthcare players submit patient and other information to one another [Healthcare Journal, April 1997].

The bill, known officially as the Health Insurance Portability and Accountability Act, is expected to help up to 25 million Americans unshackle themselves from "job lock" — a reluctance to

NCHICA HAS set the standard for privacy, electronic data interchange and other tele-medical issues.

change jobs for fear of losing health insurance coverage. The bill is also aimed at reducing paperwork by calling for greater use of electronic connectivity among healthcare providers.

For example, whenever Medical Review of North Carolina, Inc., a not-for-profit quality care organization, asks a hospital to send it information about one of its quality improvement projects, it typically ends up with stacks of bulky documents, said Jill McArdle, a senior associate for clinical information management at the Cary, N.C., company.

If those same documents were sent electronically, the hospital could substantially reduce its postage costs and pass those savings on to patients, said McArdle, a member of NCHICA's Confidentiality, Privacy and

Security focus group.

Another focus group is advocating and promoting the broad adoption and implementation of standards-based EDI functions. Instead of getting mired down trying to build new standards, NCHICA is supporting the use of nationally recognized EDI standards such as ANSI X12, NSF, UB-92 and ADA.

In the claims area alone, there are 1,200 to 1,500 different types of claims forms that can be used — a nightmare for payers and providers alike, Anderson said.

NCHICA's EDI group recently launched a demonstration project using an electronic remittance

advice function from the ANSI 820 standard between managed care provider HealthSource and other NCHICA members, such as UNC Hospital and NationsBank, said Lew Kammer, a HealthSource consultant in Raleigh, N.C. NCHICA's EDI group plans to update other members on its progress at its annual meeting in Asheville, N.C., in September before putting the standards into production by mid-1998.

Kammer added, "If we can streamline administrative tasks and either get rid of paper or reduce it, it should ultimately reduce the average cost of healthcare and benefit the average citizen." ■

HOFFMAN IS A COMPUTERWORLD SENIOR NEWS EDITOR, IS MANAGEMENT.

Wireless Works Wonders for Patients and Staff

Hospital finds that mobile staffers provide quicker, more efficient care

BY JENNIFER SCHMIDT

"We're going mobile" is a chorus the staff at Lehigh Valley Hospital could be singing since the hospital went wireless. The 770-bed acute care hospital and regional care center recently implemented wireless technology within its newly designed patient-centered care areas.

Lehigh Valley Hospital was responding to a market pushing for maintaining healthcare costs and getting higher services by establishing operations improvement and patient-centered care initiatives. These programs became the driving force behind implementing some highly visible information systems projects.

Patient-centered care, which "organizes hospital resources and personnel around patients rather than around specialized departments," was right in line with the hospital's higher-quality service goals and fits into the overall cost reduction plan by improving the utilization of resources. Wireless communication was a technology deemed necessary for patient-centered care because of the convenience it affords in accessing information. The faster turnaround with mobile computing has contributed to higher levels of patient satis-

faction and cost savings for the hospital.

For example, the dialysis unit and two nursing units were completely gutted and rebuilt with the facilities to implement the hospital's patient-centered care philosophy. In the hallways, transmitters were installed from the ceiling at strategic points and then wired into the Symbol Technologies, Inc. Spectrum24 wireless LAN for relaying signals with the wireless PCs. Residents and nurses now use midrange NEC laptops with at least 16M bytes of RAM and PCMCIA radio cards. Each laptop has an antenna attached to it and a wireless LAN card installed instead of the typical network card. Altogether, the mobile laptops operate exactly as if they were desktop machines wired directly into the LAN.

"A wireless network is definitely a trend in healthcare," said Christopher Baum, retail managing analyst of data communications and medical systems at Datapro Information Services Group, a division of the McGraw Hill Cos. "Traditionally, a patient's chart has been with the patient, and that is not necessarily where it needs to be."

He did note that one drawback to wireless LAN technology is that it's still slower than a wired LAN implementation.

But the wireless implementation needed no rewrites or changes to the hospital's applications. "This was a major criterion in the hospital's vendor

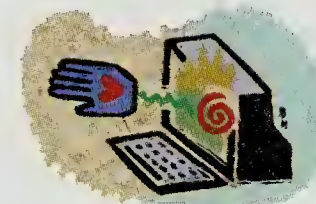
notes from NMHCC

Selected notes, musings and factoids picked up at the National Managed Healthcare Congress in Washington



"Healthcare organizations will be the largest consumers of network technology, bar none. Healthcare will prove the Internet has business value."

**BILL BYSINGER,
CHIEF TECHNOLOGY OFFICER,
HEALTH SYSTEMS
TECHNOLOGIES, INC.**



Currently, 37% of 12 million users have retrieved information from the 8 million health-care sites on the Internet. Accordingly, it is a lack of infrastructure on the provider/payer side that is hindering things.



There's a new bug around: the Provider Paradox. One hundred percent of doctors want to be the sole source of information to their patients. Zero percent of doctors want to give their E-mail addresses to patients.

selection," said Lou Bottitta, an IS manager on the mobile computing project. In addition to the LAN, Symbol's solution at Lehigh Valley Hospital is essentially all hardware changes, such as adding PCMCIA radio cards and wireless LAN cards to the mobile laptops and transmitters wired into the LAN.

"The longest part of the wireless implementation turned out to be choosing the vendor. It took a little over a year because to date, IEEE has not approved standards on wireless communication. A large part of our decision to go with Symbol was their prior dedication to specialty

a 2.4-GHz radio frequency. This was the optimal transmission that didn't interfere with hospital equipment. Mobile laptops that operate within this frequency can receive and transmit data at a rate of 1M bit/sec.

Hospital personnel are using the wireless LAN to access the clinical application system, Last Word from Phamis, Inc., and the hospital's mainframe-based electronic-mail system. The Phamis application, which supports patient care and accounting functions, is also a repository of information from other interfaced applications, such as a laboratory system from Sunquest and a

online instead of doing paperwork. "Time has been the single biggest savings. That and ease of use," Bottitta said.

Executive-level management has been very receptive to the IS changes. "Because higher-level initiatives were already in place, this particular project did not require near the cost justifications that we typically need to do," Bottitta said. Operations improvement projects are budgeted to reduce operating costs over \$35 million within three years.

The changes made in the patient-centered care area have accounted for many positive results. Because patients are moved less, patient infections are down 20%, patient falls have decreased 35%, and patient satisfaction scores are high. One reason: Patient prescriptions are filled, on average, one hour earlier.

Bottitta's biggest problem with the wireless implementation has been with the laptops. New machine purchases typically include upgraded hardware configurations requiring a different setup and taking a certain amount of time. The laptops, which weigh about 6 pounds, can be cumbersome for busy doctors and nurses to carry and have a short battery life — two to three hours.

"We will soon be introducing Symbol's latest technology, the Personal Portable Terminal. These handheld terminals are sealed, can be disinfected and are easier to hold," he said. Centralized LAN management also eliminates configuration problems. ■

SCHMIDT IS A FREELANCE WRITER IN HOFFMAN ESTATES, ILL.



lines such as retail, manufacturing and now the medical industry," Bottitta said. The hospital now has 40 laptops operating on the wireless LAN in the renovated patient-centered care areas, with over 200 staffers trained.

The Symbol Spectrum24 wireless LAN is a frequency-hopping, spread-spectrum system, which is a synchronization of pattern and frequency between the sending and receiving units, operating within

THE MOBILE laptops operate exactly as if they were desktops wired directly into the LAN.

soon to be implemented radiology system from Shared Medical Systems, Inc.

Mobile computing means patient history can be gathered at the bedside or in a family counseling room. Staffers place medical orders

ISLANDS NO MORE:

Department Systems Meet the Enterprise

IT'S A PLOT DEVICE IN MANY A SCIENCE FICTION THRILLER: THE HEROES BLOW UP AN amorphous, threatening space creature, only to find it has a dozen autonomous nerve centers, all quite happily able and willing to live and breathe on their own.

Critics of healthcare's integrated delivery network (IDN) model suspect something similar — namely, that most delivery networks are integrated in name only, with the network's hospitals, physician practices, labs, home health agencies and other ancillary facilities functioning more as separate entities than as part of a single business. Take away the common letterhead, tear up the contracts, and operations would hardly be affected.

"We still have a lot of people questioning whether integrated delivery systems really make a difference, do they really reduce costs," said Bruce Smith, chief information officer at Advocate Health Care, a not-for-profit IDN with eight hospitals and more than 200 sites of care throughout Chicago and its suburbs.

To deliver on the integrated network's promise of greater efficiency and lower costs, Advocate and healthcare systems like it are implementing strategies to standardize key information systems and processes. In particular, CIOs are stepping into the bastion of departmental computing, either telling clinicians and business staffers what systems to run or narrowing their choices according to the enterprise's business strategy.

**DEPARTMENTS LEARN THE WAYS
OF THE ENTERPRISE AS PRO-
VIDERS TIGHTEN CONTROLS OVER
ANCILLARY SYSTEMS TO BETTER
INTEGRATE DELIVERY NETWORKS
BY SHARON WATSON**

"Standardization is absolutely critical for making these emerging organizations function as true integrated systems," said Larry Pawola, executive vice president at Dorenfest & Associates, a consultancy in Chicago. "If they can't standardize data elements, statistics, clinical guidelines, etc., they're never going to have a truly integrated system."

It takes more than setting technical standards to build a truly integrated delivery system, CIOs agree. It also requires process re-engineering so data and procedural flows become "patient-centered," following the patient's path through the network. That means departments must understand how they fit into the enterprise view of the world.

"We're in the midst of a transformation from running healthcare enterprises with departments as individual profit centers without a clear

Please turn to page H10



Continued from page H8

business need for the IT investments to be highly coordinated to managing enterprises as a business totality," said Jane B. Metzger, director of the emerging practices group at First Consulting Group in Boston. "The secret to making that work is a combination of process redesign and getting the right technology to support those processes."

Those processes are more complex than ever because of the expanding boundaries of the healthcare enterprise, said John Glaser, vice president and CIO at Partners Health-Care System, Inc. in Boston. According to

Glaser, in an IDN, a "departmental system" may be a traditional ancillary system; an application just one or two entities in the network require; or a suite of applications clinicians or staffers can access across and even outside the legal boundaries of the network.

"You're seeing the same integration challenges you had with traditional department definitions but now on a much larger and more diverse scale," Glaser said. Because they have little experience running integrated systems of the size and scale now being implemented, most providers said they did not try to calculate a cost benefit analy-

sis to support standardization. Instead, they said the costs of maintaining disparate systems and data are becoming increasingly clear even without the aid of spreadsheets.

For example, when Advocate was formed two years ago through the merger of two local health systems, Smith planned to layer new systems onto the existing applications at the network's hospitals to achieve integration. Two factors changed his thinking. First, the network hospitals in the system weren't moving toward integration. "Nothing was changing. We weren't seeing a move toward a system concept," he said.

Second, he realized layering was going to be expensive. "You're paying to support all these old systems and platforms, and you're layering more cost over it to try to pull it together," he said. "If money is not a big issue in your institution, you're probably OK. But if the economics tighten up, then it really becomes a problem."

But cost containment was an issue for Advocate's management, as was standardization and stabilization of the delivery system. Meanwhile, clinicians and administrative staffers wanted strong support systems, while others were interested in projects such as electronic patient records. So Advocate adopted what Smith calls the "better in class" approach to standardization.

Smith identified the core systems — registration, billing, order entry, materials man-

agement, lab, pharmacy and radiology — critical to running the IDN. Standardizing these offers the greatest immediate benefit. But instead of searching for the latest "best in class" model of a specific system, Smith is encouraging departmental user councils to review systems already running in network hospitals and adopt one of them for their standard computing platform.

For example, a user council is evaluating three patient accounting systems running at Advocate hospitals: Invision and Allegra, both from Shared Medical Systems, Inc. in Malvern, Pa., and Medipac from HBO & Co. (HBOC) in Atlanta. While information systems staffers will provide input, it's up to the councils to reach a consensus, Smith said. The lab user council settled on a system from Sunquest, while materials management chose one from Enterprise Systems, Inc., recently acquired by HBOC.

Advocate will install these systems at each hospital in the same release version, without modification, so all eight hospitals will be running largely identical core systems by the year 2000. "That's the building block for the next layer of things, such as your advanced systems, your electronic medical records, diagnostic and document imaging," Smith said. But Advocate will embark on such projects only when all system hospitals have committed to them, he said.

"There aren't too many shortcuts," Smith said. While he admitted he does mind that standardizing department systems first means delaying advanced projects, he added that too often healthcare providers run into technical and logistical problems when they try to skip laying a strong information technology foundation and load-bearing walls for patient records and other projects. "You need to get your base in first," he said.

ONE VENDOR APPROACH

Advocate's strategy straddles the "best of breed" systems approach and the single vendor philosophies that other CIOs have adopted for standardizing systems and processes. Both approaches to integration are fairly common, analysts say, with each having a sizable list of pros and cons.

"The rationale for a single vendor strategy is that you should have to invest a lot less because the vendor will ensure integration between the parts," Metzger said. But she said the fast pace of vendor mergers and acquisitions probably means many vendors



"WE STILL
*have a lot of people
questioning whether
integrated delivery
systems really make
a difference."*

**BRUCE SMITH,
ADVOCATE HEALTH CARE**

are still working to integrate their own product lines, so seamless integration from one vendor can't be taken for granted.

Then there's the functionality trade-off issue, with the conventional wisdom being that no one vendor can offer the best features for every departmental system. At Advocate, Smith determined his users would not give up feature richness, and he compromised on the "better of breed" approach, with the caveat that systems support TCP/IP and Health Level Seven standards to ease networking and interfacing issues.

"If you go about installing a client/server, TCP/IP-based Ethernet network, your clear intent is to offer a lot more flexibility to the departments and users so they have a larger array of software solutions to buy from," said David Hinkle, director of MIS at Indian River Memorial Hospital in Indian River, Fla. During the past two years, Hinkle has dismantled a mainframe network, replacing it with a variety of servers for 25 departmental systems on a Novell, Inc. NetWare 3.12 network and integrating systems through an interface engine.

"The implications of that flexibility are that there are interfaces up the wazoo and that any time there's an upgrade, an interface is at risk," Hinkle said. Yet he said more vendor choices mean better choices if an institution can afford to build and maintain interfaces. "It's not an easy decision."

While Partners is moving toward "system homogeneity" via attrition, Glaser said, in the five- to seven-year meantime it is adopting several strategies to standardize data from a melange of systems. For instance, he recommended using browser-based technology and has picked Microsoft Corp.'s Internet Explorer as the standard.

"With browser technology, you can meet a lot of information needs without worrying so much about underlying system architectures," he said. However, Glaser did say browsers aren't simple plug-in solutions.

Network robustness is not much of an issue, he said, because physicians generally use browsers only for quick hits on a few bits of data, not major searches or linkages. "We spend more time worrying about whether they've accessed the right patient," Glaser said. To ensure Physician A accesses only the correct "Mary Smith" from several dozen identically named patients, Partners attempts to electronically link patients and physicians when patients enroll.

Glaser said he also believes in using component or object-based systems to standardize key bits of data. For instance, the network's three hospitals, Massachusetts General Hospital, Brigham & Women's Hospital and North Shore Hospital, run three lab systems, yet patient ID schemes and results presentation must be common. So the provider has selected 100 components and has worked with its lab vendors to create common objects the systems may share. That way, the systems communicate and physicians' needs are met, but wholesale system replacement is avoided.

But for some CIOs, such strategies only emphasize what they see as the main problem with best of breed strategies: seamless integration among disparate systems. "The best of breed is a very seductive argument and approach that has some fairly serious flaws when you try to implement it," said Marsha George, vice president for information services at PeaceHealth, an IDN with corporate offices in Bellevue, Wash., and five hospitals in three states. "It's very difficult to make systems with underlying architectural differences look like they're one."

That was a problem for St. Joseph Health System, headquartered in Orange, Calif., which had tried a best of breed approach since the early 1990s in its hospitals throughout California and Texas, said Daniel Roberts, vice president and CIO of the IDN.

"As we became more multidisciplinary in our human resources deployment and people did multiple things, they were having to learn different systems. As a consequence, there were some real inefficiencies," Roberts said. His department also found it difficult to ensure accurate, synchronized data movement among systems. And he felt too many resources would be devoted to stabilizing additional best of breed systems instead of to strategic projects.

Like Advocate, St. Joseph identified a number of core systems to standardize, including admissions, order entry and respiratory therapy, but chose one vendor,

Meditech, to do so. The provider will roll out the system in its 16 hospitals over the next three years, with each region likely to run its own data center based on Windows NT servers. Each hospital will be responsible for the bulk of the system implementation and its own niche systems that Daniels has elected not to standardize.

Daniels said his staff and personnel from all hospitals in the St. Joseph network spent about eight months deciding how to standardize such system elements as diagnostic procedure codes to ensure the Meditech sys-

Please turn to next page



"IT'S VERY
*difficult to make
systems with under-
lying architectural
differences look like
they're one."*

**MARSHA GEORGE,
PEACEHEALTH**

Continued from page H11

tems would truly help the network make meaningful internal data comparisons and build standard clinical pathways.

That experience highlights a key corollary to standardization and integration, CIOs say: Done well, it requires massive process redesign. "You touch everybody's lives and change the way everything happens," PeaceHealth's George said.

In particular, she and other CIOs say that as they standardize, they're trying to look at work processes and information flows from the patient's perspective across the entire continuum of care. "That really forces people out of their silos," George said.

That includes hospital-size silos, too. For instance, PeaceHealth's five hospitals had to agree on a single set of master files to run on the provider's chosen IS standard platform from Phamis, Inc. in Seattle. In addition, the hospitals created a common charge master, or list of billable items, so bills could be uniform across the network.

"It's a big change management issue, going from optimizing a departmental function to looking at how the entire delivery system operates. It gets into things that go far beyond information systems," George said. "It gets into how department managers are compensated and assessed. If they are assessed only on the operation of their department, it's pretty hard to convince them they need to give up anything in their area for the good of the whole."

But CIOs agree that the transition from a department-centric to an enterprisewide view is gaining acceptance. "Managed care comes in, and people start to see the bigger picture and understand why systemwide information is so crucial," said Gail Walther, manager of information services at Yuma Regional Medical Center in Yuma, Ariz., which is standardizing on HBOC products.

What's ironic is that even as most departments are finding their system choices limited, most CIOs now expect departmental users to take more responsibility for learning and running their systems. With individual users at IDNs often totaling in the thousands, IS departments just don't have the resources to offer intense, individualized attention, CIOs agree.

Advocate tells individual hospitals they're responsible for budgeting for IS support personnel for any but the core system projects. Indian River's Hinkle and Yuma's

PERSUASION IS KEY

to physician acceptance of IT standards

PHYSICIANS' RELATIONSHIPS WITH IDNs are often akin to that between the UK and the European Economic Community: They reluctantly recognize the value of such a union but would prefer to join on their own terms, at their own pace.

That creates a challenge for network CIOs standardizing vital data systems. While physicians are sometimes salaried network employees, they often either have an affiliation agreement with a network or are independent. Those physicians increasingly serve as the patient's front door to a delivery network. Yet networks can't afford to alienate these physicians by imposing IT standards on them.

"If you don't own [the physicians], then it's much more difficult to integrate," said Gail Walther, manager of computer services at Yuma Regional Medical Center. She said one approach is to work with senior management in a practice on the business-related benefits of integrated systems.

CIOs also step lightly around affiliated physicians. "Because physicians tend to be

autonomous in their thinking, we haven't yet tried to impose a standard," said Daniel Roberts, vice president and CIO at St. Joseph Health System in Orange, Calif.

Instead, Roberts informs network physician groups in California and Texas about what systems each is using. That approach led some Northern California groups to consider the same coding product their downstate colleagues had bought. Similarly, a group in Texas is eyeing an IDX Systems practice management solution that some of its West Coast peers use.

One network has decided totally standardizing affiliated physician systems isn't necessary. At Partners HealthCare, CIO John Glaser said patients usually receive care within a "constellation" of local physicians and a local hospital. Such constellations rarely intersect.

"So you want constellations very well integrated, but you don't need a lot of integration between constellations," he said. The sticky question, Glaser said, is figuring out which processes need to be standard. That physicians from two constellations dictate their patient notes differently probably wouldn't be an issue, but they'd have to use the same clinical dictionary to ensure data integrity.

While standardizing physician processes and systems may seem challenging, most CIOs say physicians can be won over as they see the benefits of integration. "Even doctors can be reasonable businesspeople when presented with a decent set of facts," Roberts said.



Walther said they expect users to budget for an employee whose primary job is making the system work for that department. They say it's part of realizing that technology is now a critical part of everyone's job.

"The departments learn it's to their advantage to have that data ownership because they realize IT people don't know their business the way they do," Walther said. "Some of the decisions we might make for them are not the ones they would have wanted."

Nevertheless, while departments will need to manage their systems daily, CIOs will

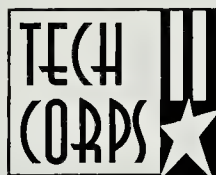
make sure they fit into the enterprise perspective. "Patients travel across the health system; you really don't treat them in a department," Smith said. And just as other industries have transcended the needs of the department for the good of the enterprise, he expects healthcare will do the same. "Healthcare's been doing what's best for the department for the last 100 years," he said. "And that model just doesn't work." ■

WATSON IS A FREELANCE WRITER IN CHICAGO SPECIALIZING IN HEALTHCARE AND TECHNOLOGY.

Despite an early lead
in technology, will
America end up playing
second fiddle?



America's IT industry. The best in the world. But we're throwing away our leadership. Because our knowledge and skills aren't being passed on to enough of our young people. Tech Corps gives your corporation a vehicle to change that. By supporting a grassroots



effort to enhance teaching and learning through technology. And give students the skills they need to keep our country number one. Discover the rewards of becoming a Tech Corps Corporate Sponsor. 508/620-7751 • <http://www.ustc.org>
America needs to know.

Organizations already providing national sponsorship include Cellular Telecommunications Industry Association Foundation (CTIA), Digital Equipment Corporation, and MCI Foundation

Are You Prepped for a Data Warehouse?

Healthcare's challenge is not to determine whether a data warehouse is an appropriate solution but to understand why access to integrated information is valuable and how this combined information will be used.

BY TIMOTHY DEPRIEST

Many healthcare organizations are finding themselves in a precarious position as they strive to improve the quality of healthcare and simultaneously reduce the cost of managing and delivering this care. Compounding the difficulty is the fact that the data needed to make the decisions to achieve both of these goals is located in separate, discrete and non-synchronized systems.

The emerging solution is to create a data warehouse that will enable a healthcare organization to access, compile, analyze and present data. The technology to support this has been used by industries as diverse as manufacturing and banking, with extraordinary results. Independent studies find successful data warehousing efforts provide an ROI of about 400%.

Therefore, healthcare's challenge is not to determine whether a data warehouse is an appropriate solution but to understand why access to integrated information is valuable and how this combined information will be used. Lack of a clear understanding here significantly contributes to the 50% failure rate of data warehousing projects.

The business objectives of a data warehouse fall into two main categories: improving business and clinical decision-making and improving internal process efficiency. But the process of defining the busi-

ness objectives of any healthcare organization is shifting as the care continuum evolves. Health plans that have focused on claims processing are now developing disease management programs. Conversely, independent physician associations that have focused on care are adding cost of care management as they assume financial risk for treating member populations under capitation arrangements. It is critical to not only identify but also prioritize an organization's business objectives, as both will impact data warehouse planning, development, use and payback.

Suppose a managed care organization wanted to use data to improve its business decision-making by evaluating and rationalizing its existing provider network. The organization would require cost and utilization data to be compiled, analyzed and presented across a number of dimensions such as region, physician practice and individual provider. Some of this data might come from the claims processing system, though the intent of this system is to process claims, not evaluate providers. As a result, the data must be manipulated into information that will satisfy the business objective.

If the organization possessed a different business objective (i.e., to improve claims processing efficiency), then the data would still require manipulation but of a different manner. What drives the extent of data manipulation is

the distinct expectations and returns associated with strategic (*directing* the business) and operational (*running* the business) objectives. These differences impact the scope, complexity, timing and return of a data warehouse project.

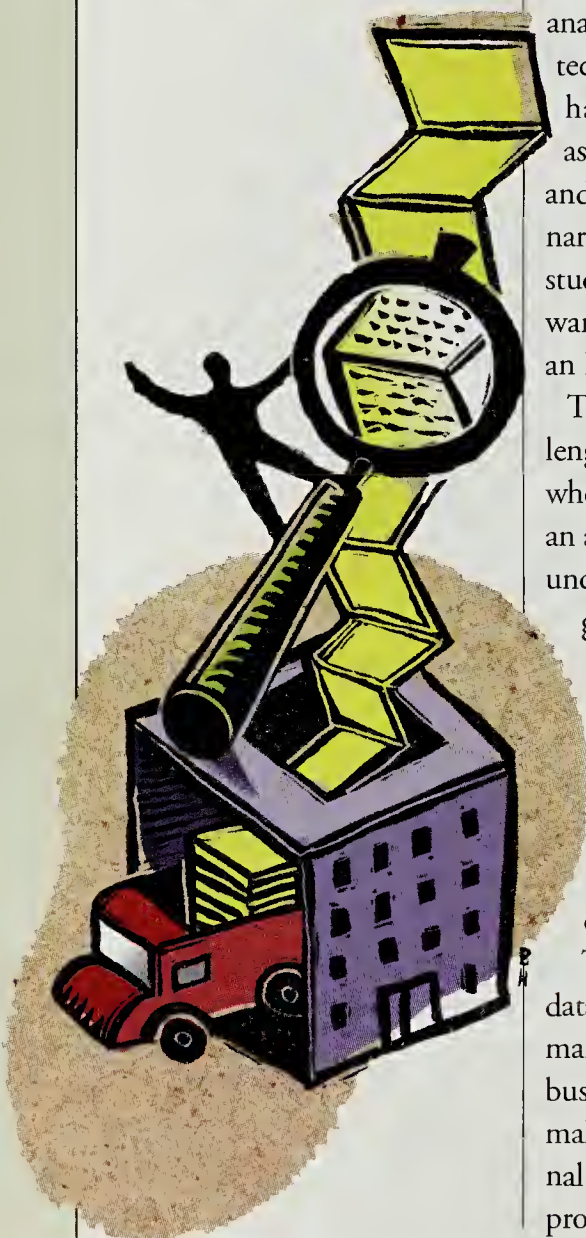
Unfortunately, data warehouse development is complicated by other considerations. Process and people issues must also be addressed when defining objectives and determining investment in a project. Does the same managed care organization, with information that a provider exceeds internal cost and utilization benchmarks, possess a process for monitoring, counseling or terminating the provider? Will it act? If staffers are not empowered, they will be slow to act on even accurate information. So understanding whether and how the info will be used is as important as defining business objectives.

Data warehousing can deliver significant financial returns. But to succeed, an organization must clearly identify and prioritize business objectives, evaluate existing process and people capabilities and understand the roadblocks to information use. ■

DEPRIEST IS A MANAGER WHO SPECIALIZES IN INFORMATION-BASED DECISION-MAKING AT DELOITTE & TOUCHE CONSULTING GROUP'S HEALTHCARE PRACTICE.



HE HAS WORKED EXTENSIVELY WITH MANAGED CARE AND PROVIDER GROUPS.



COMPUTERWORLD's Code of Ethics

1. Computerworld's first priority is the interest of its readers.
2. Editorial decisions are made free of advertisers' influence.
3. We insist on fair, unbiased presentation in all news and articles.
4. No advertising that simulates editorial content will be published.
5. Plagiarism is grounds for dismissal.
6. Computerworld makes prompt, complete corrections of errors.
7. Journalists do not own or trade in computer industry stocks.
8. No secondary employment in the IS industry is permitted.
9. Our commitment to fairness is our defense against slander.
10. All editorial opinions will be clearly labeled as such.



WORDS WE LIVE BY.

When you pick up a copy of *Computerworld*, you know you're getting the most objective, unbiased news and information in IS. Our code of ethics guarantees it.

Why do we make such a big deal out of editorial integrity?

Because the words you read in *Computerworld* often have a dramatic impact on your business, your career, and your future.

You use this information to evaluate new products. To get a candid view of emerging technologies. To find out the inside story on corporate strategies. To decide whether to jump ship or stay in your current job. To get the edge on your competition.

In short, *Computerworld* is filled with the words IS professionals like you live by.

WORDS YOU WORK BY.

Week in and week out, our editors and reporters call it the way they see it – on issues ranging from network management to reengineering. They dig deeply to bring you the most accurate, comprehensive news in IS.

It's no wonder over 150,000 IS professionals pay to subscribe to *Computerworld*. Shouldn't you? Order today and you'll receive 51 information-packed issues. Plus, you'll get our special bonus publication, *The Premier 100*, an annual profile of the leading companies using IS technology.

Call us toll-free at **1-800-343-6474**, or visit us on the World Wide Web at <http://www.computerworld.com>. To order by mail, use the postage-paid subscription card bound into this issue.

You'll get the kind of straightforward, impartial reporting you can work by. You have our word on it.

COMPUTERWORLD
The Newsweekly for Information Technology Leaders

Why is it necessary for a hospital
to have a versatile network?

Because

now,
this
is a hospital.



Part of the changing face of healthcare, is the changing *place* of healthcare.

That's where 3Com comes in. As a leading networking supplier for healthcare providers, we help you connect with the information resources you need to deliver the best possible care in today's distributed healthcare environment.

With 3Com, you get a powerful, flexible strategy for growing and managing your network, supported by practical, standards-based products across the technology spectrum. 3Com solutions make network access easier—from anywhere, at any time. And we make it simpler to scale your network's performance and reach as your care options expand.

So, wherever your healthcare network is headed next, 3Com is the ideal place to start.

1-800-NET-3Com

www.3com.com

Access³

To see how 3Com healthcare customers are accessing information anytime, from anywhere, visit our World Wide Web site at www.3com.com/nsc/industry or call for your healthcare networking information kit.

